

**METHOD AND APPARATUS FOR GENERATING PROGRESSIVE QUERIES AND  
MODELS FOR DECISION SUPPORT**

**Cross-Reference to Related Applications**

This application claims the benefit of U.S. Provisional Patent Application Serial Nos. 60/263,026 and 60/263,039, each filed January 19, 2001, and each of which is incorporated herein by reference. This application is related to U.S. Patent Application Serial No. 10/047,854 (~~IBM Docket No. YOR920010076~~), filed contemporaneously herewith and incorporated herein by reference.

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**Field of the Invention**

The present invention relates to distributed information systems and, more particularly, to data acquisition and transmission for decision support models. It details a method and an apparatus which optimize on a decision-support value function of progressively acquired and transmitted data.

**Background of the Invention**

Today's distributed information gathering systems for decision support are often designed and parameterized with fixed targets, fixed precision, fixed transmission intervals, and fixed decision models. Such systems are good for constant surveillance of a fixed phenomenon. For example, the NASA Solar and Heliospheric Observatory (SOHO) satellite launched in 1995 observes the Sun and the solar wind. SOHO takes photos of the Sun at various spectra at fixed time intervals (avg. 18 mins) and transmits the digitized signals to ground stations at a fixed resolution for scientific studies. Science models are then built with the parameters based on SOHO specifications. For example, a model to detect corona mass ejection from a sequence of photos of the Sun assumes SOHO specification of 18 min acquisition intervals and 512 by 512 pixel resolution. Studies and model-building are largely one-way with no possibility of feeding